

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

ORDER NO. R2-2006-0064

**UPDATED WASTE DISCHARGE REQUIREMENTS AND RECISSION OF:
WASTE DISCHARGE REQUIREMENT ORDER NO. 96-113;
CLEANUP AND ABATEMENT ORDER NO. 01-139; AND
TIME SCHEDULE ORDER NO. 01-140 FOR:**

**UNITED STATES DEPARTMENT OF DEFENSE, DEPARTMENT OF THE ARMY
LANDFILL 26
FORMER HAMILTON ARMY AIRFIELD
NOVATO, MARIN COUNTY**

I. FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Water Board), finds that:

A. NAMED DISCHARGER

The United States Army is hereinafter named as the Discharger based upon its history as a past operator of Landfill 26 and its record as owner/title holder of the landfill property. Not named as a Discharger in this Order is the United States Army Corps of Engineers (USACE), which has been designated by the Department of Defense to perform the necessary remedial and closure activities at the Landfill on behalf of the United States Army.

B. PURPOSE OF ORDER

This Order updates Waste Discharge Requirements for Landfill 26 and outlines a regulatory framework for bringing Landfill 26 to post-closure status. The Order also rescinds Waste Discharge Requirement Order No. 96-113, Cleanup and Abatement Order No. 01-139, and Time Schedule Order No. 01-140. These existing Orders no longer reflect the Board's understanding of conditions at the landfill or the path forward for the landfill that has been addressed with the USACE and the Department of Toxic Substances Control (DTSC).

C. BACKGROUND

1. **Location:** Landfill 26 is located in the northern part of the former Hamilton Army Air Field (HAAF), near the City of Novato in Marin County. The Landfill is located to the east of Highway 101 and to the west of San Pablo Bay (Figure 1).
2. **HAAF History:** HAAF was developed as a military facility and has been used by both the United States Army and the United States Air Force. HAAF was initially acquired from Marin County by the United States Army in 1932 and was developed for the Army Air Corps under the name Hamilton Field. The facility transferred from the United

States Army to the United States Air Force in 1947, when the Army Air Corps was reformed into the United States Air Force and was subsequently renamed as Hamilton Air Force Base. The military base transferred back to the United States Army in 1984 and was renamed again as Hamilton Army Air Field. The United States Army is the current title holder of the Landfill 26 property.

3. **Operation of Landfill 26 at HAAF:** Landfill 26, shown on Figure 2, covers an area of approximately 30 acres. Landfill 26 operated from the mid-1940's until 1974, when the landfill was deactivated and stopped receiving waste. Consistent with landfill practices at that time, a liner was not installed at the base of the refuse layer.

It is reported that Landfill 26 received about 150,000 cubic yards of solid waste (both hazardous and non-hazardous) and approximately 26,000 cubic yards of oily sludge. The refuse layer within Landfill 26 is approximately 5 to 8 feet in thickness and is mostly saturated with groundwater. Chemical contaminants associated with the refuse layer include the following: volatile and semi-volatile organic compounds, petroleum hydrocarbons, pesticides, polychlorinated biphenyls, and metals.

4. **Landfill 26 Closure:** Landfill 26 was deemed closed sometime between 1992 and 1995 in general compliance with appropriate portions of Chapter 15, Title 23 of the California Code of Regulations and in accordance with an August 11, 1989 Record of Decision (ROD), as revised by a May 10, 1991 Explanation of Significant Differences (ESD). Remedial actions taken during the closure process included the following actions:

- a. *Installation of a Groundwater Extraction and Treatment System:* As part of the ROD, a groundwater extraction and treatment system (consisting of 13 extraction wells, a conveyance system, and treatment plant) was designed by the USACE and installed between 1992 and 1993. Operation of the system was intended to provide a preventative measure for hydraulic containment of groundwater and treatment if impacts were noted from water migrating through the Landfill 26 refuse. To date, the system has not been operated because such groundwater impacts have not been noted so as to justify operation of the system.
- b. *Construction of a Landfill Cap:* Landfill 26 was originally covered in 1993 with approximately 2 to 6 feet of fill that was highly variable in composition, texture, and thickness. Additional cover was placed over the landfill between 1994 and 1995 consistent with Resource Conservation and Recovery Act (RCRA) cap specifications. The final cap includes a foundation layer that is at least 2 feet in thickness; a layer of low-permeable clay approximately 16 inches in thickness; a low density, polyethylene liner; a drainage net; and ground cover consisting of 2 to 3 feet of fill and 6 inches of vegetation. The landfill cap also includes drainage features and erosion control devices that were designed to help maintain integrity of the cap and limit the potential for its deterioration over time.

A potential issue with the Landfill 26 cap has been that portions of the cap are within the saturated zone due to shallow groundwater. Potential degradation of the landfill cap from groundwater contact will be evaluated under the Provisions (Section IV) of this Order.

- c. *Designation of a Buffer Zone:* The USACE designated a "buffer zone" around Landfill 26 during construction of the landfill cap. The buffer zone is an extra 150 to 200 feet of property that surrounds the landfill cap to provide an additional factor of safety for preserving integrity of the cap (Figure 3).
5. **Adjacent Land Use and Environmental Impacts:** Landfill 26 is currently bordered by Ammo Hill to the north; open space to the west; a wetland restoration project to the northeast; Reservoir Hill and the former Petroleum, Oil, and Lubricant (POL) Hill to the east, and a residential community (Hamilton Meadows) to the south and southeast. Land surrounding the landfill has had historic military uses that include: military housing (barracks), an airstrip, maintenance buildings, a Skeet Range (suspected), a Quartermaster's Salvage Yard, and other ancillary uses (Figure 2). Most structures associated with former military use have been removed.

Structures and facility operations surrounding Landfill 26 that either released contaminants to the environment or were identified as potential release sites are listed below. Investigations have identified eight plumes of groundwater pollution in the immediate vicinity of Landfill 26, which consist of five petroleum fuel releases, two trichloroethene (TCE) releases, and a methyl tertiary butyl ether (MTBE) plume that is associated with an upgradient petroleum fuel release. These sites are as follows:

 - a. Underground Storage Tank (UST) sites at former Building 750 (USTs removed)
 - b. The Motor Pool Area (no longer in operation and facility dismantled)
 - c. The Quartermaster's Salvage Yard (metals and fuel-related wastes detected in soil within the footprint of the former building)
 - d. Building 783 (removed)
 - e. An area located west of the Landfill within the vicinity of a former ammo bunker (Trichloroethene (TCE) detected in groundwater)
 - f. The Naval Exchange Gas Station (UST 957) and Public Works Center (UST) 970 sites (USTs removed) to the southwest. Petroleum releases from these sites have commingled and contribute to a groundwater plume containing constituents of gasoline fuel, including methyl tertiary-butyl ether (MTBE). This plume underlies the Landfill, in part, along its southwestern side. The Navy is currently taking action to remediate groundwater impacts.

D. REGIONAL SETTING AND HYDROGEOLOGY

Landfill 26 lies within the Novato Creek floodplain between Reservoir and Ammo Hills. This area was formerly a marshland in communication with San Pablo Bay. Influences on hydrogeology of the area include:

1. **Soil:** Soil in the Landfill 26 vicinity consists of Quaternary deposits that include: alluvium, colluvium, and bay deposits. "Bay Mud" and gray clay are reported to be laterally continuous within portions of the landfill and may act as aquitards that locally restrict vertical groundwater flow. Native deposits are disturbed in areas by placement of fill and engineered materials. The thickness of native soils underlying Landfill 26

ranges from 0 feet in the east (where refuse contacts bedrock) to approximately 40 feet towards the north.

2. **Bedrock**: Bedrock beneath soil deposits is Franciscan Complex of Cretaceous age. The bedrock is composed of an assortment of sedimentary and metamorphic rocks. Hard sandstone and greywacke rocks are notable within the Franciscan Complex because they are relatively resistant to weathering and are often visible as bedrock peaks or "knockers." Tectonic activity has sheared the Franciscan Complex such that the bedrock is pervasively fractured and sometimes resembles *mélange*. Shear zones within the bedrock can be highly fractured or crushed. Approximately the upper ten feet of bedrock is generally more friable due to weathering.
3. **Groundwater**: Groundwater in the vicinity of Landfill 26 is affected by topography. Reservoir and Ammo Hills (Figure 2) recharge groundwater and locally affect hydraulic conditions. In general, groundwater flows to the north and northeast in the direction of San Pablo Bay. Horizontal hydraulic gradients at Landfill 26 are approximately 0.01 feet per foot and can be up to approximately 0.15 feet per foot near the hills.

Groundwater in the vicinity of Landfill 26 may not be suitable for use as a drinking water source. Total dissolved solids (TDS) of groundwater north of the landfill suggest that the groundwater is brackish to saline. TDS of groundwater upgradient of the landfill has been measured in the range of freshwater. Groundwater underlying the site may also be unsuitable for drinking water development due to low yield.

E. REGULATORY HISTORY OF ORDERS FOR LANDFILL 26

The following Water Board Orders have been issued for Landfill 26.

1. **Order 92-029 (rescinded)**: Waste Discharge Requirements were issued in March 1992. Order 92-029 required the Discharger to implement a revised remedial alternative, which included closure of the Landfill, construction of a low-permeable cap, and hydraulic containment (as described in the ROD and ESD). The Order also required further investigation of groundwater surrounding the Landfill, on-going monitoring of groundwater quality, measures to prevent landfill flooding and cap washout, and implementation of a wetland mitigation plan. Order 92-029 was rescinded by Order 96-113.
2. **Order 95-188**: A National Pollutant Discharge Elimination System Permit was issued in September 1995 for the potential discharge of treated groundwater from a groundwater extraction and treatment system to a storm drainage system that discharges to San Pablo Bay. The system was constructed but has never been operated based upon groundwater monitoring data which indicated groundwater treatment was not necessary.
3. **Order 96-113**: Although the Landfill 26 was deemed closed earlier, Waste Discharge Requirements were issued in August 1996 that rescinded former Order 92-029. The basis for Order 96-113 was evidence that additional information was required to further evaluate the nature and extent of groundwater contamination and the need for corrective action. The Order also prohibited creating conditions of pollution or nuisance.

4. **Orders 01-139 and 01-140:** Cleanup and Abatement and Time Schedule Orders, respectively, were issued in December 2001 based on the discovery of methane gas and other information pertaining to site conditions and violations of Order 96-113.

a. *Change of Conditions and Violations:*

- (1) Portions of HAAF land surrounding the Landfill transferred ownership in 1999 when approximately 260-acres of land abutting the southern, western, and northern edges of the "buffer zone" were sold by the U.S. Army to the City of Novato. The City of Novato in turn resold portions of this property to the New Hamilton Partnership (Shea Homes), who completed construction of the Hamilton Meadows residential housing development, located within a few hundred feet of the south and southeastern boundaries of the Landfill (Figure 3).
- (2) Pollutants were detected in groundwater and soil gas beyond the permitted boundary of the Landfill which suggested that pollution might not be contained within the Landfill. Both methane gas and volatile organic compounds were detected in soil gas to the south of the Landfill boundary and thereby created a nuisance or threatened nuisance condition at the Hamilton Meadows development. Potential soil gas impacts to the west, north, and east remained to be sufficiently investigated. In addition, some diesel hydrocarbons and volatile organic compounds were identified outside boundaries of the Landfill in groundwater.

b. *Requirements of Orders 01-139 and 01-140:* Requirements of these Orders included the following:

- (1) Corrective action to mitigate the migration of contaminants as soil gas or in groundwater outside of the landfill boundaries
- (2) Improvements in monitoring programs for both soil gas and groundwater
- (3) Post-closure maintenance activities for the Landfill

F. BASIS FOR UPDATING WASTE DISCHARGE REQUIREMENTS AND RESCINDING ORDER NUMBERS 96-113, 01-139, AND 01-140

This Order updates Waste Discharge Requirements for Landfill 26 and rescinds three Orders (Numbers 96-113, 01-139, and 01-140). The purpose of this Order is presented as Finding B of this Order. The justification and legal basis for the Order is presented below:

1. **Justification:** The Water Board finds that the Discharger has caused or permitted waste to be discharged or deposited to the environment such that it is or probably will contact waters of the State and that it either creates or threatens to create a condition of contamination, pollution, or nuisance. This Order requires corrective action to protect human health and the environment and to restore, to the extent practical, the beneficial uses of groundwater impacted by Landfill 26. Preparation of the Order is consistent with the following:

- a. *State Board Resolution No. 68-16*: "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not exceed applicable water quality objectives.
 - b. *State Board Resolution No. 92-49*: "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge.
 - c. *State Board Resolution No. 89-39*: "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels. Some groundwater underlying and adjacent to the site qualifies as a potential source of drinking water.
 - d. *Basin Plan*: The Water Board adopted a Water Quality Control Plan for the San Francisco Bay Basin (Region 2) (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Water Board amended the Basin Plan (Resolution No. R2-2004-0003) on January 21, 2004. The State Water Board and the Office of Administrative Law approved these amendments on July 22, 2004, and October 4, 2004, respectively. The US EPA gave final approval to the amendment on January, 5, 2005.
2. **Legal Basis**: According to Federal Law, Department of Defense (DOD) facilities are subject to the Environmental Restoration Program through Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) regulations and are subject to applicable State laws:
- a. *Federal Law references include*:
 - (1) United States Code, Title 10, Subtitle A, Part IV, Chapter 160, Section 2701 Environmental Restoration Program
 - (2) Executive Order No. 12580, which designates the Department of Defense (DOD) as the lead agency for implementation of CERCLA regulations on property under DOD control
 - (3) United States Code, Title 42, Chapter 82 Solid Waste Disposal, Subchapter VI Federal Responsibilities
 - (4) United States Code, Title 42, Chapter 103 (CERCLA)
 - b. *Applicable State Laws include*:
 - (1) California Water Code (CWC), Division 7 Water Quality (Porter-Cologne Water Quality Act)
 - (2) California Code of Regulations, Title 23, Chapter 15, Waste Discharges to Land

(3) California Code of Regulations, Title 27, Environmental Protection Division 2,
Solid Waste

G. BENEFICIAL USES

The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the site:

1. Municipal and domestic water supply
2. Industrial process water supply
3. Industrial service water supply
4. Agricultural water supply

At present, there is no known use of groundwater underlying the site for the above purposes.

H. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

This Order is an action to protect or enhance the environment and is exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15308 of Title 14, California Code of Regulations.

I. PUBLIC PARTICIPATION AND STAKEHOLDER NOTIFICATION

The Water Board intends to update waste discharge requirements and rescind three Orders for Landfill 26 with this Order. The Water Board has provided the Discharger and interested parties (including agencies, stakeholders, and the public) notification of the intent to issue this Order and has provided interested parties an opportunity to comment on the Order in writing and at a public meeting. The Water Board has read and heard comments from the interested parties and has considered all viewpoints and recommendations.

IT IS HEREBY ORDERED that:

The United States Army, its agents, successors, and assigns shall meet the applicable provisions contained in Title 27, Division 2, Subdivision 1 of the California Code of Regulations and Division 7 of the California Water Code and shall comply with the following:

II. PROHIBITIONS

A. WASTE MANAGEMENT

1. The treatment, discharge, or storage of wastes or materials shall not be allowed to create a condition of pollution or nuisance as defined in the California Water Code (Section 13050 (l) and (m)).
2. The waste management unit shall prevent migration of wastes to adjacent geologic materials, groundwater, or surface water.

B. LEACHATE MANAGEMENT

Leachate from wastes or ponded water that comes into contact with refuse shall not be discharged to waters of the State or of the United States unless specifically authorized under a National Pollution Discharge Elimination System (NPDES) permit.

C. WASTE MANAGEMENT UNIT MAINTENANCE AND MANAGEMENT

1. Wastes shall not be disturbed or relocated without approval from regulating agencies.
2. Excavation within or reconfiguration of the waste management unit is prohibited without prior concurrence of Water Board staff.
3. Activities associated with subsurface investigation and cleanup that will cause significant adverse migration of pollutants are prohibited.
4. No additional waste shall be deposited or stored at the waste management unit.
5. Conditions at the landfill shall not be allowed to reduce or impair integrity of the waste management unit or create a hazard. Conditions of concern include heat, pressure, fire, explosion, toxic by-products, and reaction products.
6. Integrity of the waste management unit (including the landfill cap) shall be maintained and prevented from degradation that causes or threatens to cause a waste discharge.
7. Drainage around the landfill shall be maintained to minimize infiltration and water flow into the landfill and prevent ponding.

D. PROTECTION OF GROUNDWATER, SURFACE WATER, AND AIR

1. The Discharger, or any future owner or operator of the landfill, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:
 - a. *Surface Waters:*
 - (1) Floating, suspended, or deposited macroscopic particulate matter or foam
 - (2) Bottom deposits or aquatic growths
 - (3) Alteration of temperature, turbidity, or apparent color beyond natural background levels
 - (4) Visible, floating, suspended, or deposited oil or other products of petroleum origin
 - (5) Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations
 - b. *Groundwater:*
 - (1) Further degradation of groundwater quality
 - (2) Substantial worsening of existing groundwater impacts

c. *Air:*

Hazardous conditions or a nuisance condition from the generation of decomposition gases within the landfill.

2. Migration of pollutants through subsurface transport to waters of the State is prohibited.
3. Migration of soil gas through the subsurface shall be controlled.

III. SPECIFICATIONS

A. REPORTING

1. All reports submitted pursuant to this Order shall be prepared under the supervision of and signed by a California – certified registered civil engineer, professional geologist, or certified engineering geologist.
2. The Discharger shall implement Corrective Action Programs, pursuant to Title 27, Section 20430, to remediate releases from waste management units and to achieve compliance with Water Quality Protection Standards (WQPS) that have been approved by the Executive Officer.
3. The Discharger shall maintain a copy of these waste discharge requirements, and these requirements shall be available to operating personnel at all times [CWC Section 13263].
4. In addition to a hard copy, an electronic copy of all reports shall be submitted to the Water Board.

B. TITLE 27 COMPLIANCE

The Discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order. In addition to direct requirements of this Order, the Discharger shall comply with any additional interim requirements the Executive Officer specifies that apply a requirement, under Title 27, that is not yet addressed in this Order.

C. WASTE MANAGEMENT OPERATION AND MAINTENANCE

1. The Discharger shall maintain its waste management unit so as to prevent a statistically significant increase in water quality parameters at points of compliance as provided in 27CCR, Section 20420.
2. The Discharger shall maintain its waste unit to prevent discharges, such that the unit does not constitute a pollution source.
3. Waste management unit stewardship shall continue following closure according to a Post-Closure Operation and Maintenance Plan approved by the Executive Officer.
4. Closure of a waste management unit shall be approved by the Executive Officer.

5. The site shall be protected from any washout or erosion of wastes or cover material and from inundation that could occur as a result of a 100-year, 24-hour precipitation event, or as the result of flooding with a return frequency of 100 years.
6. All geotextile and geomembrane materials placed or replaced within the waste management unit shall meet the requirements of Title 27.
7. The Discharger shall assure that the landfill and associated structures can withstand conditions generated during the maximum probable earthquake such that human health, property, and the environment are protected.
8. Exterior surfaces of the landfill must be maintained to promote lateral run off and drainage of precipitation away from the landfill without eroding the landfill cover or causing ponding.
9. Methane and other landfill gases shall be adequately vented, removed from the landfill units, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water.
10. A minimum of two permanent surveyed monuments near the landfill shall be used to locate and monitor landfill facilities and potential settlement throughout the operation and post-closure maintenance period. Survey data shall be provided by a licensed land surveyor or registered civil engineer.

D. REMEDIATION FACILITY MAINTENANCE

1. Landfill and remediation systems (including, but not limited to, systems used for containment, collection, treatment, control, and monitoring) shall be maintained as long as contaminated waste, soil, or water is present and poses a threat to water quality. [The groundwater extraction and treatment system that was installed at Landfill 26 has not been operated and is not subject to this Specification (Section III, Subpart D) unless it is operated for Landfill 26.]
2. The Discharger shall, at all times, properly operate and maintain landfill and remediation systems and related appurtenances which are installed or used by the discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order [CWC Section 13263(f)].
3. The Discharger shall annually demonstrate in the Annual Report (see Provisions) that landfill and remediation systems are functioning as intended and designed.

E. REMEDIATION FACILITY AUGMENTATION

1. The Discharger will be required to install additional groundwater monitoring wells and/or undertake corrective action measures if there is an imminent threat to the beneficial uses of surface or subsurface waters of the State.
2. The Discharger will be required to submit and implement a site specific groundwater corrective action if water quality immediately outside the boundary of any waste management unit continues to degrade.

F. GROUNDWATER AND SURFACE WATER PROTECTION

1. The Discharger shall conduct monitoring activities according to a monitoring program approved by the Executive Officer, to verify the effectiveness of groundwater remediation and containment systems and waste management unit closure systems.
2. The Discharger shall provide reasonable access to any property they own or lease at the site to allow for installation, sampling, monitoring, etc., of all devices and equipment necessary for compliance with the requirements of this Order.
3. The Discharger shall conduct monitoring activities as specified in this Order. Should monitoring results show evidence of plume migration, additional plume characterization of pollutant extent shall be required.
4. The Discharger shall submit photographic documentation of any soil or groundwater corrective action features installed at the facility.
5. All monitoring wells shall be constructed in a manner that maintains the integrity of the drill hole, prevents cross-contamination of saturated zones, and produces representative groundwater samples from discrete zones within the groundwater zone each well is intended to monitor. All investigation and monitoring points shall be backfilled or decommissioned according to applicable federal, state, and local requirements.
6. The Discharger shall install any reasonable additional monitoring devices required to fulfill the terms of any future Discharge Monitoring Program issued by the Executive Officer.
7. All borings shall be logged during drilling under the direct supervision of a registered geologist whose signature appears on the corresponding well log. Logs of monitoring wells shall be filed with the Department of Water Resources. All information used to construct the wells shall be submitted to the Water Board upon completion of the wells.
8. All monitoring instruments and devices used by the Discharger to fulfill the approved self-monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

9. All analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR Part 136) promulgated by the U.S. Environmental Protection Agency.
10. The groundwater sampling and analysis program shall ensure that groundwater quality data are representative of the groundwater in the area that is monitored.
11. The Discharger shall monitor for all constituents of concern (COC) at intervals determined in a monitoring program approved by the Executive Officer.
12. The Discharger shall operate and maintain the waste management facility so as to prevent a statistically significant increase to exist between water quality at compliance monitoring wells and the established Water Quality Protection Standards (WQPS). The Discharger shall establish these WQPS and a statistical methodology to evaluate water quality monitoring data according to the requirements of this Order and Title 27 Sections 20390 - 20435.

G. NOTIFICATION

1. The Discharger shall notify the Water Board immediately of any failure that threatens the integrity of any containment and control facilities, structures, or devices. Any such failure shall be promptly corrected after approval of the method and schedule by the Executive Officer.
2. All closure activities shall conform to the most recently approved closure plan and be in compliance with all applicable federal, state, and local regulations.
3. Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the office of Emergency Services of the discharge in accordance with the spill reporting provision of the state toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Board or the appropriate Water Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the Water Code unless the discharger is in violation of a prohibition in the applicable water Quality Control Plan [CWC Section 13271(a)].

H. RESPONSIBILITIES

1. The Water Board considers the property owner and site operator to have continuing responsibility for correcting any problems that arise in the future as a result of waste discharge or related operations or site use.
2. Upon presentation of credentials, the Discharger shall permit the Water Board or its authorized representative:
 - a. Immediate entry upon the premises on which wastes are located or in which any required records are kept;
 - b. Access to copy any records required under the terms and conditions of this Order;
 - c. Inspection of any treatment equipment, monitoring equipment, or monitoring methods required by this Order or by any other California State Agency; and
 - d. Sampling of any discharge or groundwater governed by this Order.
3. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations, nor do they create a vested right to continue the waste discharge [CWC Section 13263(g)].
4. This Order is subject to Water Board review and updating, as necessary, to comply with changing state or Federal laws, regulations, policies, or guidelines; changes in the Basin Plan; or changes in the discharge characteristics [CWC Section 13263].

IV. PROVISIONS

1. Monitoring Requirements

The Discharger shall continue to monitor groundwater quality and soil gas and submit monitoring reports according to the requirements and the schedule of the *Landfill Monitoring Program Final Workplan, Hamilton Army Airfield, Novato, California*, prepared by MWH in November 2003, and the *Addendum to the Work Plan for the Landfill Monitoring Program, Hamilton Army Airfield, Novato, California*, prepared by the USACE in August 2005. Evaluation and discharge monitoring shall be conducted on an annual basis, as discussed below:

- a. Evaluation Monitoring: Evaluation monitoring program shall continue where water quality impairment has occurred, or upon determination that a statistically significant increase in indicator parameters or waste constituent concentrations has occurred based on detection monitoring. Technical evaluations shall include evaluating the containment of polluted groundwater and the control of soil gas.

- b. Discharge Monitoring: The Discharger shall monitor the waste management unit for changes in conditions (Provision 11) and defects. Observations from inspections of the landfill and its systems (see Specification D) and any maintenance or repair activities that were performed or are needed shall be reported annually.

2. **Corrective Action Investigation**

DUE DATES: Well Installation - December 29, 2006
 Installation Report - May 15, 2007

The Discharger shall conduct investigation activities that were recommended in the *Final Report, Landfill 26 Corrective Action Investigation Work Plan, Hamilton Army Airfield, Novato, California*, prepared by CH2MHill for the USACE, dated December 16, 2005. The work plan identified data gaps and recommended further investigation through installation of an additional monitoring well. The proposed monitoring well shall be installed and monitored on a quarterly basis, as recommended in the *Final Report, Landfill 26 Corrective Action Investigation Work Plan, Hamilton Army Airfield, Novato, California* and as acceptable to the Executive Officer, for a minimum period of one year.

3. **Corrective Action Investigation/Five-year Review Report**

DUE DATE: December 31, 2007

A report, acceptable to the Executive Officer, shall be submitted that summarizes investigation data, including data generated by implementation of Provision 2 of this Order. The report shall be submitted to the Water Board as a Corrective Action Investigation Report and may be prepared to jointly serve as a Five-Year Review Report for the DTSC, if the report meets their requirements. The report shall include the following:

- a. A summary and evaluation of groundwater elevation data and a discussion of hydraulic conditions at and in the vicinity of the Landfill
- b. A summary and evaluation of groundwater sampling data collected for the Landfill which includes delineation of the extent of impacts of constituents of concern and discussion, if applicable, of trends in the sampling data
- c. A summary and evaluation of soil gas sampling data which includes a plot showing locations of monitoring points where methane and volatile organic compounds have been detected in the Landfill vicinity and discussion, if applicable, of trends in the sampling data
- d. An overall assessment of investigation data and an evaluation of potential data gaps
- e. Recommendations for either additional investigation or corrective action

4. **Feasibility Studies**

DUE DATE: December 31, 2007 (soil gas feasibility study)

Feasibility studies shall be prepared, as necessary, to evaluate remedial action alternatives to address potential impacts to human health and/or the environment based on investigation data. Feasibility studies shall include:

- a. the identification of applicable regulatory requirements
- b. proposed cleanup action objectives and cleanup standards which are protective of human health and the environment
- c. the identification and evaluation of potentially applicable cleanup technologies and presentation of cleanup action alternatives with effectiveness, implementability, and cost comparisons
- d. be acceptable to the Executive Officer

The USACE is preparing a feasibility study to address soil gas that has been detected at Landfill 26 in parallel with the report due under Provision 3.

5. **Corrective/Remedial Action Plan**

DUE DATE: June 30, 2008

This provision requires a decision document for corrective or remedial action that is acceptable to the Executive Officer and addresses impacts, or potential impacts, to human health and the environment, as required by Chapter 6.5 (commencing with Section 25100 et. seq.) of Division 20 of the Health and Safety Code and Division 7 (commencing with Section 13000 et. seq.) of the California Water Code. A Corrective Action/Remedial Action Plan shall be the decision document resulting from technical review of reports submitted under Provisions 3 and 4. The decision document shall address regulatory agency concerns, including the following:

- a. *Containment of Landfill gas:* The potential for gas generated within the Landfill to migrate outside of its boundaries needs to be addressed. Actions are required to mitigate soil gas from accumulating beneath the landfill cap and from migrating laterally through the subsurface beyond boundaries of the landfill. The effectiveness of interim remedial measures taken to intercept and vent soil gases (the trench-vent system) and the feasibility of remedial alternatives shall be evaluated.
- b. *Containment of Polluted Groundwater:* The Corrective Action Plan shall evaluate impacts of Landfill materials and wastes on groundwater and the potential for pollutants to migrate in groundwater beyond boundaries of the Landfill at concentrations above their respective Water Quality Objectives (defined in the San Francisco Bay Basin Plan).

- c. *Integrity of the Landfill Cap*: The Final Corrective Action Investigation Workplan, dated December 16, 2005 states that in some areas "groundwater elevations are above the landfill cap material at the Landfill perimeter throughout most of the year". The USACE must evaluate the potential for impairment of the low hydraulic conductivity layer due to the permanent saturated conditions. The State Water Board/CIWMB regulations Division 2, Title 27, Chapter 3, subchapter 2, Article 3, Section 20240 (c) states in part that existing landfills, waste piles, and surface impoundments shall be operated to ensure that wastes will be a minimum of five feet (5 ft.) above the highest anticipated elevation of underlying ground water..." The Corrective Action Plan shall evaluate the potential for groundwater to degrade the landfill cap integrity over time, through both physical and chemical processes, which could cause a release of pollutants to the environment.
- d. *Updates to the Risk Assessment*: Data evaluated in the five-year review shall be used to revisit risk assessments conducted for the Landfill and an updated risk assessment shall be included that addresses potential threats to human health and the environment from soils, soil gas, and groundwater exposures.
- e. *Proposed Corrective (Remedial) Action*: Corrective action shall be proposed to address threats to human health and the environment through all exposure pathways. The corrective action that is proposed and any construction plans or system design drawings that are submitted shall have sufficient detail to permit full consideration upon review. The proposed corrective action shall:
 - (1) comply with all applicable Federal, State and local regulations regarding discharges to air, land, and waters of the State and shall not have the potential to create adverse health effects and/ or nuisance conditions
 - (2) present a time-schedule to complete corrective action, such as construction/ installation, startup, and operation
 - (3) include procedures, goals, and a time schedule for conducting verification monitoring and evaluating performance of the corrective action
 - (4) summarize institutional controls if restrictions are part of the corrective action
 - (5) include a provision for a Land Use Covenant if the property is sold or otherwise transferred to a non-federal entity, pursuant to Title 22, Section 67391 and civil code 1471
 - (6) include responses to public comments on the proposed Correction Action Plan
 - (7) address requirements of the DTSC and its landfill closure certification process

6. **Contingent Corrective Action Implementation Report**

DUE DATE: June 30, 2009

A report shall be submitted to document corrective actions taken under Provision 5. The report shall include data from verification monitoring and an evaluation of effectiveness of the corrective action. The report shall provide recommendations for additional work or closure and shall be acceptable to the Executive Officer.

7. **Landfill Closure and Post-Closure Plan**

DUE DATE: within 90 days of the approval of Provision 6.

The Discharger shall update and submit a revised closure and post-closure plan for the landfill that:

- a. is drafted in accordance with requirements outlined in Title 27, Subchapter 5, Articles 1 and 2 entitled "Closure and Post-Closure Maintenance" and shall include provisions to:
 - (1) maintain the structural integrity and effectiveness of all containment structures, and maintain the final cover as necessary to correct the effects of settlement or other adverse factors
 - (2) continue to operate any groundwater, leachate, and precipitation collection and removal systems that are part of long-term stewardship for the landfill
 - (3) maintain monitoring systems and monitor the ground water, surface water, and the unsaturated zone in accordance with applicable requirements of Article 1, Subchapter 3, Chapter 3, Subdivision 1 (section 20380 et seq.)
 - (4) prevent erosion and related damage of the final cover due to drainage; and
 - (5) protect and maintain surveyed monuments [installed under section 20950(d)]
- b. describes plans and present a time schedule for: monitoring the quality of soil gas, groundwater, and surface water; conducting landfill inspections; and preparing and submitting of monitoring and inspection activities
- c. includes measures to minimize the potential for exposure of hazardous materials and wastes within the landfill and to protect engineered remedies, such as the landfill cap
- d. meets requirements of the DTSC certification process for landfill closure
- e. is acceptable to the Executive Officer

8. **Duty to Comply:** The Discharger shall comply immediately, or as prescribed by the time schedules presented above, with all Prohibitions, Specifications and Provisions of this Order. All required submittals must be acceptable to the Executive Officer.
9. **Severability:** Provisions of these waste discharge requirements are severable. If any provision of these requirements is found invalid, the remainder of these requirements shall not be affected.
10. **Endangerment of Health or the Environment:** The Discharger shall report any noncompliance that may endanger public health or the environment. Any such information shall be provided orally to the Executive Officer within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance

and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours [CWC Sections 13263 and 13267].

11. **Notification of Change in Site Conditions:** The Discharger shall immediately notify the Water Board of any changes in site conditions that could cause a contaminant release and/or impair integrity of the landfill, the landfill cap, and/or associated structures, such as structures used for containment and drainage control. Changes in site conditions includes: flooding, ponding, settlement, equipment failure, slope failure, exposure of waste, and deleterious land use activities. The Discharger shall immediately mitigate or make repairs if there is a change in site conditions and shall prepare and submit a technical report, acceptable to the Executive Officer, documenting the corrective action.
12. **Notification of Impending Field Activities:** The Discharger shall provide Water Board staff with at least 72 hours notice of the date and time of any field activity associated with compliance with this Order.
13. **Entry and Inspection:** The Discharger shall allow the Water Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this order;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this order;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
 - d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this order or as otherwise authorized by the California Water Code, any substances or parameters at any location. [CWC Section 13267]
14. **Document Distribution:** Copies of all formal written correspondence, reports, and documents pertaining to compliance with this Order shall be provided to the following agencies in addition to the Water Board:
 - a. U.S. Environmental Protection Agency
 - b. DTSC
 - c. California Integrated Waste Management Board
 - d. Marin County Department of Environmental Health
 - e. Bay Area Air Quality Management District

In addition, final copies of reports and documents pertaining to the following Provisions shall also be provided to the following entities:

- f. City of Novato
- g. Novato Community Partners
- h. Novato Unified School District
- i. The Landfill's local information repository so as to be locally available for public review.

15. **Change of Ownership or Control of Facility:** The Water Board considers the property owner and site operator to have a continuing responsibility for correcting any problems within their reasonable control which arise in the future as a result of this Order. In the event of any change in control/operator or ownership of land or parcel of land, or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. The Discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the existing and new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgment that the existing dischargers are liable for violations up to the transfer date and that the new discharger is liable from the transfer date on. [CWC Sections 13267 and 13263]. The request must contain the requesting entity's full legal name, the address and telephone number of the persons responsible for contact with the Water Board and statement. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

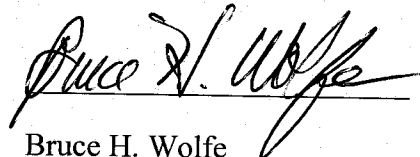
16. **Discharges To Navigable Waters:** Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill material subject to Section 404 of the Clean Water Act and discharge subject to a general NPDES permit) must file an NPDES permit application with the Water Board. [CCR Title 2 Section 223571]

17. **Electronic Reporting Format:** In addition to print submittals, all reports submitted pursuant to this Order must be submitted as electronic files in PDF format. The Water Board has implemented a document imaging system, which is ultimately intended to reduce the need for printed report storage space and streamline the public file review process. Documents in the imaging system may be viewed, and print copies made, by the public, during file reviews conducted at the Water Board's office. PDF files can be created by converting the original electronic file format (e.g., Microsoft Word®) and/or by scanning printed text, figures & tables. Upon request by Water Board staff, monitoring results, including water level measurements, sample analytical results, coordinates, elevations, etc., shall be provided electronically in Microsoft Excel® or similar spreadsheet format. This format facilitates data computations and/or plotting that Water Board staff may undertake during their review.

All electronic files, whether in PDF or spreadsheet format, shall be submitted via the Water Board's file transfer protocol (FTP) site, email (only if the file size is less than 3 MB) or on CD. CD submittals may be included with the print report. Email notification shall be provided to Water Board staff whenever a file is uploaded to the Water Board's FTP site.

18. **Rescission of Existing Orders:** This Order supersedes and rescinds Waste Discharge Requirement Order No. 96-113, Cleanup and Abatement Order No. 01-139, and Time Schedule Order No. 01-140.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 11, 2006.



Bruce H. Wolfe
Executive Officer

Attachments:

- Figure 1: Site Location Map
Figure 2: Site Vicinity Map
Figure 3: 2005 Landfill 26 Monitoring Network

Figure 1: Site Location Map

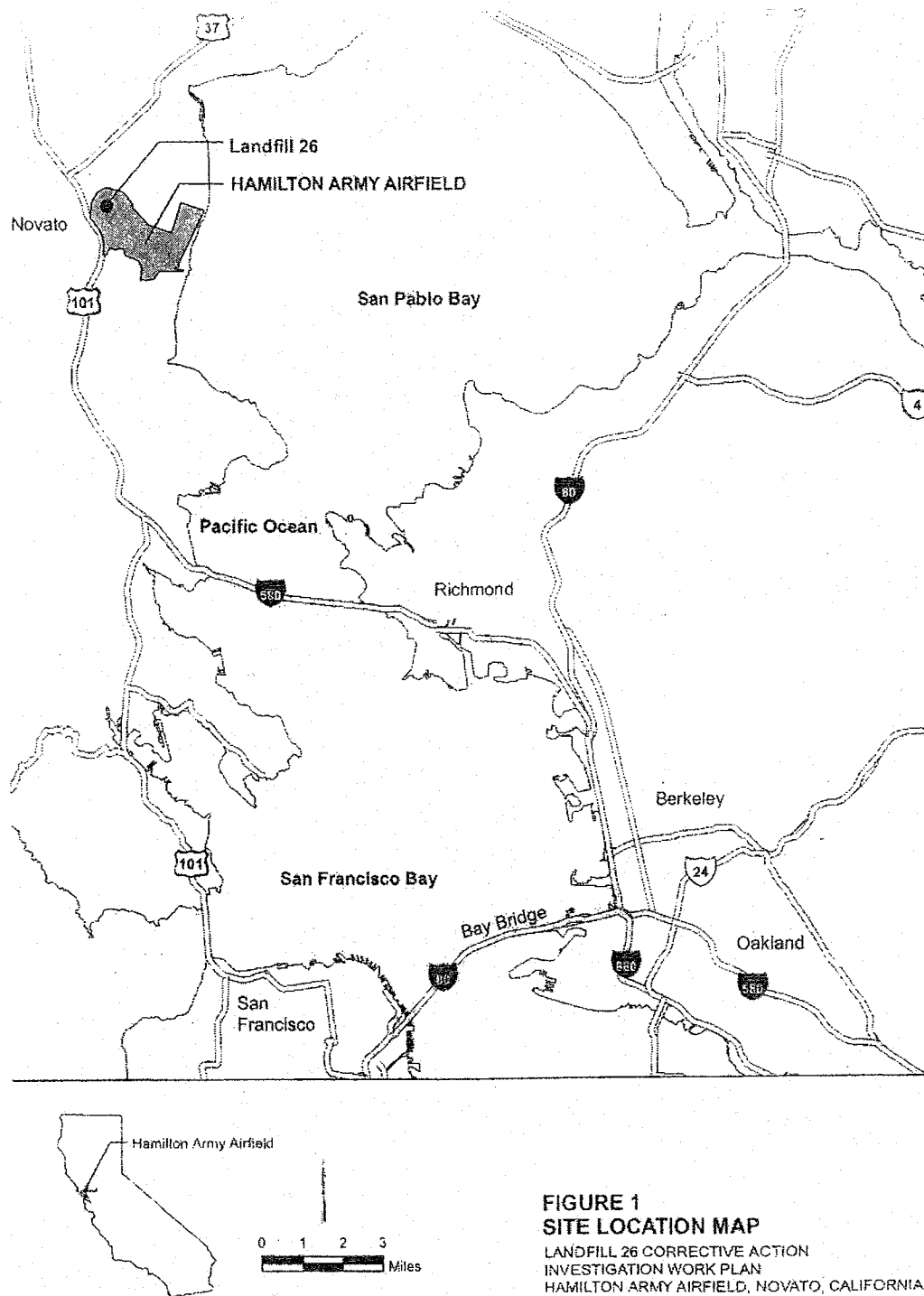


Figure 2: Site Vicinity Map

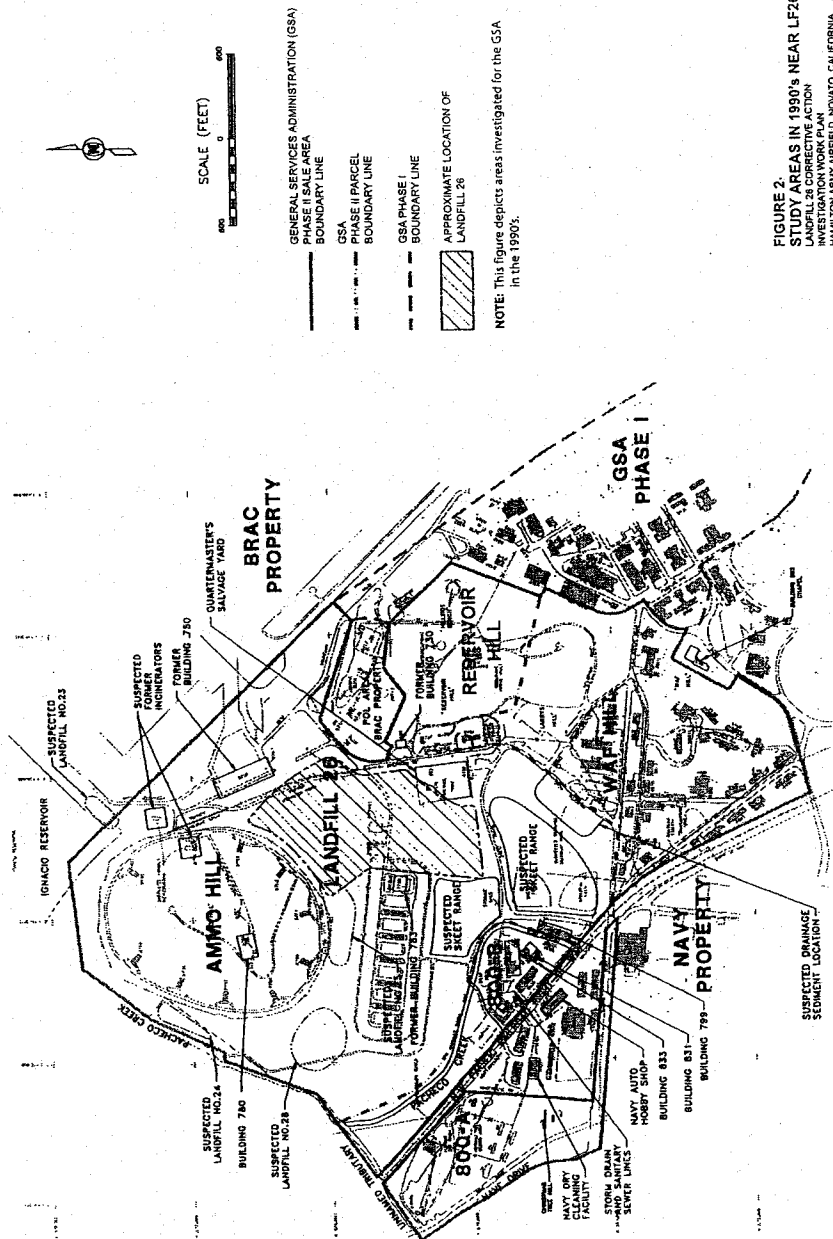


Figure 3: 2005 Landfill 26 Monitoring Network

